STATEMENT OF BASIS 8-30-2004
Title V Permit to Operate
Proposed Permit No.: V-FDL-R50003-04-01

The purpose of this document is to set forth the legal and factual basis for permit conditions. This document shall provide a brief description of the derivation of the conditions of the permit and the rationale for their inclusion, as required by 40 CFR. § 71.11(b).

1.0 GENERAL INFORMATION

(A). Applicant and Stationary Source Information

Permittee	Facility (SIC Code: 4922)
Great Lakes Gas Transmission Limited Partnership 5250 Corporate Drive Troy, Michigan 48908 Contact: Dorothy Fleming (248) 205-7454	Cloquet Compressor Station No. 5 3741 Brandon Road Cloquet, Minnesota 55720 St. Louis County Contact: John Wallbillich (248) 205-7426

(B). Background on the Construction, Operation, and Permitting of Cloquet Compressor Station No. 5

Great Lakes Gas Transmission Limited Partnership (Great Lakes) submitted a 40 CFR Part 71 air pollution operating permit application to Region 5 of the United States Environmental Protection Agency (EPA) on November 12, 1999, for its Cloquet Compressor Station No. 5 (CS #5). CS #5 is located on privately-owned fee land within the exterior boundaries of the Fond du Lac Band of Lake Superior Chippewa Indian Reservation in St. Louis County, Minnesota. The compressor station consists of three natural gas fired turbines, each powering its own compressor, and one natural gas-fired standby electrical generator.

In the late 1990's, Region 5 reviewed the status of sources located in Indian Country. During this review it was determined that, because CS #5 is located in Indian Country and not within Minnesota state jurisdiction, the construction permits for the modifications (and corresponding operating permits) were erroneously issued by the Minnesota Pollution Control Agency (MPCA). This federal permitting action is intended to correct this oversight.

CS #5 was originally constructed prior to federal requirements that a source obtain a pre-construction air pollution permit or meet the requirements of EPA’s New Source Performance Standards

(NSPS). Under the assumption that EPA's delegation to Minnesota to administer and enforce an operating permits program applied to CS #5, Minnesota subsequently took the following actions:

- In 1989, MPCA issued operating permit No. 365-89-OT-1 allowing the replacement of an existing gas fired compression turbine, unit 1, with the installation of new emission unit (EU) 001, and the operation of existing EU 002. Based on the capacity and installation date of EU 001, it is subject to NSPS.

- In 1992, MPCA issued a modification to permit No. 365-89-OT-1 (Amendment No. 1) allowing the construction of a new emission unit, EU 003. Based on the capacity and construction date of EU 003, it was determined that the unit was subject to NSPS, and was also required to go through the PSD permitting process (including a Best Available Control Technology (BACT) analysis).

- In 1994, MPCA issued another modification to permit No. 365-89-OT-1 (Amendment No. 2) adopting a custom fuel sampling schedule as allowed under the NSPS and approved by EPA.

- In 1993 a natural gas-fired standby generator (EU 004) was installed to replace the original generator installed in 1968. Great Lakes accepted an operational limit of 4,500 hours per year to keep the net emissions increase from this replacement below the PSD significant emission threshold.

- In 1998, MPCA issued a combined Part 70 operating permit/NSR facility wide permit (No. 13700066-001). The facility was required to complete computer dispersion modeling to demonstrate compliance with the NO_x increment consumption by applicable emission units since the minor source baseline date in St. Louis County was triggered. The modeling determined that operation of the electrical generator less than 3000 hours per year would prevent an exceedance of the allowable increment. This 3000 hours per year limit for EU 004 was incorporated into the Part 70 MPCA permit.

Because Minnesota did not and currently does not have authority to issue permits to sources in Indian Country, its Great Lakes' permits are not valid. Thus, CS #5 does not meet the Part 71 permit requirement of being in compliance with all applicable

requirements of the Clean Air Act (CAA), i.e., it constructed without federally valid construction permits.

Therefore, EPA is concurrently proposing for comment a draft PSD permit for this facility.

(C). Facility Description

Great Lakes operates nearly 2,000 miles of underground pipeline, which transports natural gas for delivery to customers in the midwestern and northeastern United States and eastern Canada. The pipeline's 14 compressor stations, located approximately 75 miles apart, operate to keep natural gas moving through the system. Great Lakes owns and operates five compressor stations in Minnesota: St. Vincent Compressor Station #1, Thief River Falls Compressor Station #2, Shevlin Compressor Station #3, Deer River Compressor Station #4, and Cloquet Compressor Station #5. Compressors operated at these stations add pressure to natural gas in the pipeline causing it to flow to the next compressor station. The pipeline normally operates continuously, but at varying loads, 24 hours per day and 365 days per year.

CS #5 is located 17 miles west of Cloquet, near the intersection of county roads 847 and 851, and in St. Louis County, Minnesota. The facility property occupies an area of approximately 20 acres and is owned by Great Lakes.

CS #5 consists of three stationary natural gas-fired turbines, which in turn drive three natural gas compressors. Additionally, one natural gas-fired standby electrical generator provides electrical power for critical operations during temporary electrical power outages and during peak loading.

(D). Area Classification

CS #5 is located on privately-owned fee land within the exterior boundaries of the Fond du Lac Band of Lake Superior Chippewa Indian Reservation. The EPA is responsible for issuing and enforcing any air quality permits for the source until such time that the Tribe or State has EPA approval to do so.

St. Louis County, and all Indian Country within, is designated attainment for all criteria pollutants. CS #5 is within 25 miles of the state of Wisconsin. There are no PSD Class I areas within 100 kilometers of CS #5.

(E). Enforcement Issues

The EPA is not aware of any pending enforcement issues at this facility.

(F). Pollution Control Equipment

Emission control for the turbines consists of the standard combustor technology available at the time of construction for the turbines.

2.0 PROCESS DESCRIPTION

(A). Emission Unit Summary

Emission Unit	EU 001	EU 002	EU 003	EU 004
Unit Type	Turbine/ Compressor	Turbine/ Compressor	Turbine/ Compressor	Standby Electrical Generator
Date Installed	3/1/1989 Replaced a unit originally installed in 1971	1/1/1970	1/1/1992	1/1/1993 Replaced a unit originally installed in 1968
Manufacturer/ Model	General Electric LM 2500	Rolls Royce Avon 76 G	General Electric LM 1600	Caterpillar SR-4
Fuel Type	Natural Gas	Natural Gas	Natural Gas	Natural Gas
Heat Input (MMbtu/hr)	251.1	166.4	184.0	4.8
Stack Height (ft)	39.5	31.0	38.8	10.0
Inside Stack Diameter (ft)	7.25	9.18	6.58	0.67
Stack Temperature (^{o}F)	936	769	934	813
Stack Flow Rate (ACFM)	341,397	199,174	249,809	5,951
Velocity (ft/sec)	137.83	50.15	122.44	281.32

(B). Insignificant Activities

Unit/Activity	**Basis**
Space Heaters	40 CFR 71.5(c)(11)(i)(D)
Boiler	40 CFR 71.5(c)(11)(i)(D)
Parts cleaner	40 CFR 71.5(c)(11)(ii)(A)
Welding	40 CFR 71.5(c)(11)(ii)(A)
Access road	40 CFR 71.5(c)(11)(ii)(A)

(C). Potential Emissions

The following tables were calculated by EPA after receipt of the Part 71 application submitted in 1999, and after receiving 2000 emission testing data for compliance and emission inventory purposes. All emission factors are from AP-42 tables published in April 2000, except for NO_x, CO, and VOC. Emission Factors for NO_x, CO, and VOC were calculated from performance test performed at the facility in May 2000. The maximum ambient horsepower rating (HP) for each unit was used when calculating Potential to Emit (PTE) for the system.

Potential to Emit Summary								
EU	**Emission Unit Description**	**PM tpy**	**SO_2 tpy**	**NO_x tpy**	**CO tpy**	**VOC tpy**	**Pb tpy**	**Total HAPs tpy**
001	turbine	7.26	67.75	471.8	128.7	3.52	ND	1.13
002	turbine	4.81	44.90	146.5	384.8	37.61	ND	0.75
003	turbine	5.32	49.64	371.5	13.7	0.48	ND	0.83
004	generator	0.21	0.012	85.8	11.7	2.48	ND	2.04
Total Potential Emissions		17.60	162.30	1075.6	538.9	44.09	ND	4.75

Emission Factors (lb/MMbtu)

EU	Unit	PM	SO2	NO_x	CO	VOC	Pb	Total HAPs
001	turbine	0.0066[a]	0.06016[a]	0.429[c]	0.117[c]	0.0032[c]	ND	0.00103[a]
002	turbine	0.0066[a]	0.06016[a]	0.201[c]	0.528[c]	0.0516[c]	ND	0.00103[a]
003	turbine	0.0066[a]	0.06016[a]	0.461[c]	0.017[c]	0.0006[c]	ND	0.00103[a]
004	gen-erator	0.01[b]	0.000588[b]	4.08[b]	0.557[b]	0.118[b]	ND	0.097[b]

ND = No Data
a From U. S. EPA AP-42, chapter 3.1 for stationary gas turbines, published April 2000. Percent Sulfur in pipeline quality natural gas defined as 0.064% by weight (40 CFR 72.2 and gas tariff)
b From U. S. EPA AP-42, chapter 3.2 for gas-fired reciprocating engines, published July 2000.
c From April 2000 performance test. VOC is measured as total non-methane hydrocarbons (THC), reduced by 80% to account for VOC only compounds.

PTE Calculations:

$$PTE = EmissionFactor \times MaxHeatInput \times OperationLimit$$

$$PTE = \frac{lb}{MMBtu} \times \frac{MMBtu}{hr} \times \frac{8760hr}{yr} \times \frac{0.0005ton}{lb} = tpy$$

EU 001: 251.1 MMBTU/hr
NO_x: 0.429 lb/MMBTU * 251.1 MMBTU/hr * 8760 hr/yr * 0.0005 ton/lb = 471.8 tpy

EU 002: 166.4 MMbtu/hr
NO_x: 0.201 lb/MMbtu * 166.4 MMbtu/hr * 8760 hr/yr * 0.0005 ton/lb = 146.5 tpy

EU 003: 184.0 MMbtu/hr
NO_x: 0.461 lb/MMbtu * 184 MMbtu/hr * 8760 hr/yr * 0.0005 ton/lb = 371.5 tpy.

(D). Actual Emissions

The following emission estimates are based on data submitted by the facility for their 2002 Air Emission Inventory.

Actual Emission Summary								
EU	**Emission Unit Description**	**PM tpy**	**SO_2 tpy**	**NO_x tpy**	**CO tpy**	**VOC tpy**	**Pb tpy**	**Total HAPs tpy**
001	turbine	3.7[a]	0.1[a]	235.7[a]	64.3[b]	0.3[a]	0	0.6[b]
002	turbine	1.4[a]	0.0[a]	40.9[a]	290.1[b]	5.4[a]	0	0.6[b]
003	turbine	3.8[a]	0.1[a]	258.8[a]	9.3[b]	0.3[a]	0	0.6[b]
004	generator	NR	NR	NR	NR	NR	NR	NR
Total Actual Emissions		8.9	0.2	535.4	363.7	6.0	0	1.8

NR No Reported
a Based on the Facility's 2002 Air Pollutant Emission Inventory for CS#4 dated October 28, 2003.
b Based on the emission factors above and throughput of natural gas reported for the 2002 Air Pollutant Emission Inventory.

3.0 APPLICABLE REGULATIONS AND DETERMINATIONS

(A). Title V Operation Permitting

CS #5 is a major stationary source and is subject to Title V permitting because it has potential emissions greater than one hundred tons per year for NO_x, CO, and SO_2, and because it is required to have a PSD permit for the construction of emission units at the source. Section 502 of the Clean Air Act makes it unlawful for, among other things, major stationary sources, which are sources that emit or have the potential to emit one hundred tons per year or more of any air pollutant or sources required to have a permit under Part C of the Act, to operate without an operation permit from EPA or from the designated permitting authority for the area in question. The Title V operation permit contains all Federal air quality regulatory requirements that apply to CS #5.

(B). New Source Performance Standards (NSPS)

1. NSPS Subpart GG

EU 001 and EU 003 have a heat input at peak load equal to or greater than 10.7 gigajoules per hour based on the lower heating value of the fuel fired. Additionally, each unit was constructed and/or has been modified after October 3, 1977. Based on these conditions both units are subject to Subpart GG.

i. NSPS Subpart GG Custom Fuel Monitoring

Great Lakes has an EPA-approved custom fuel monitoring plan for monitoring sulfur content for turbine EU 001 and EU 003. Such monitoring plans are allowed under the New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart GG (40 CFR §60.330 et seq. "Standards of Performance for Stationary Gas Turbines").

(C). Prevention of Significant Deterioration (PSD) Permitting

EPA is concurrently proposing for comment a draft PSD permit which defines BACT limits and all other applicable federal permit requirements. In accordance with 40 CFR 71.6 (a)(1), the applicable PSD permit requirements are incorporated into this Part 71 permit.